

Claims:

5 1. A method of providing protection against disease in an animal comprising:
(a) admixing a water soluble palatable flavorant with a water soluble vehicle for administration of an orally administered vaccine;
(b) further admixing with the mixture of step (a), an antigen selected from the group consisting of a bacterium and a virus as an active component of the orally administered vaccine; and
(c) administering the orally administered vaccine of step (b) to an animal to provide protection against disease associated with infection by the antigen.

10 2. The method of claim 1, wherein the antigen is capable of causing disease in an animal selected from the group consisting of swine, poultry, cattle, sheep, goats, horse, cat and dog.

15 3. The method of claim 2, wherein the antigen is selected from the group consisting of *Erysipelothrix rhusiopathiae*, *Actinobacillus pleuroneumonia*,
20 *Mycoplasma hyopneumoniae*, *E. coli* K88, K99, F41 and 987P, *Clostridium perfringens* type c, *Salmonella choleraesuis*, *Pasterurella multocida*, *Bordetella bronchiseptica*, *Leptospira bratislava*, *Leptospira canicola*, *Leptospira grippotyphosa*, *Leptospira hardjo*, *Leptospira pomona*, *Leptospira ictero*, Porcine Influenza virus, Circovirus, PRRS virus, Swine pox, Rotavirus, Porcine Respiratory Coronavirus,
25 Parvo virus, Pseudorabies, transmissible gastroenteritis agent, *Streptococcus equi*, *Clostridium tetanus*, Equine Influenza Virus A1 and A2 strains, Equine Rhinopneumonids type 1, 1b and 4, Eastern Equine Encephalomyelitis, Western Equine Encephalomyelitis, Venezuelan Equine Encephalomyelitis, Equine Rotavirus, *E. coli* O157:H7, *Pasterurella multocida*, *Pasterurella haemolytica*, *Clostridium perfringens* type D, *Clostridium chauvoel*, *Clostridium novyi*, *Clostridium septicum*, *Clostridium haemolyticum*, *Clostridium sordellii*, *Salmonella dublin*, *Salmonella typhimurium*, Bovine Rotavirus, Bovine coronavirus, Bovine rhinotracheitis, Bovine diarrhea virus, Parainfluenza-3, Respiratory syncytial virus, *Sepullina pilosicoli*,

~~Marek's disease virus, Infectious bursal disease, Infectious bronchitis, Newcastle disease virus, Reo virus, Turkey rhinotrachelitis, Coudiosis, Canine *Borrelia burgdorferi*, Canine *Ehrlichia canis*, Canine *Bordetella bronchiseptica*, Canine *Giardia lamblia*, Canine distemper, Canine Adenovirus, Canine Coronavirus, Canine~~

5 ~~Parainfluenza, Canine Parvovirus, Canine Rabies, Feline *Chlamydia psittaci*, Feline immunodeficiency virus, Feline infectious peritonitis virus, Feline leukemia virus, Feline rhinotrachelitis, Feline Panleukopenia, Feline rabies.~~

4. The method of claim 1, wherein the vaccine is administered through drinking water.

5. The method of claim 1, wherein the animal is selected from the group consisting of swine, poultry, cattle, sheep, goats, horse, cat and dog.

6. The method of claim 1, wherein the animal is selected from the group consisting of swine and poultry.

7. The method of claim 6, wherein the administration of the orally administered vaccine is a mass administration through drinking water.

20 8. The method of claim 7, wherein the animal is a pig and the antigen is *Erysipelothrix rhusiopathiae*.

9. The method of claim 1, wherein the animal is selected from the group 25 consisting of dog and cat.

10. The method of claim 7, wherein the administration of the orally administered vaccine into the mouth through a syringe.

30 11. A method of inducing increased intake of an orally administered vaccine by an animal comprising:

(a) admixing a water soluble palatable flavorant with a water soluble vehicle for administration of an orally administered vaccine;

(b) further admixing with the mixture of step (a), an antigen selected from the group consisting of a bacterium and a virus as an active component of the orally administered vaccine; and

(c) administering the vaccine admixture of step (b) orally to the animal;
5 (d) inducing the increased intake of the orally administered vaccine with the flavorant.

12. The method of claim 11, wherein the antigen is capable of causing disease in an animal selected from the group consisting of swine, poultry, cattle,
10 sheep, goats, horse, cat and dog.

13. The method of claim 12, wherein the antigen is selected from the group consisting of *Erysipelothrix rhusiopathiae*, *Actinobacillus pleuroneumonia*, *Mycoplasma hyopneumoniae*, *E. coli* K88, K99, F41 and 987P, *Clostridium perfringens* type c, *Salmonella choleraesuis*, *Pasterurella multocida*, *Bordetella bronchiseptica*, *Leptospira bratislava*, *Leptospira canicola*, *Leptospira grippotyphosa*, *Leptospira hardjo*, *Leptospira promona*, *Leptospira ictero*, Porcine Influenza virus, Circovirus, PRRS virus, Swine pox, Rotavirus, Porcine Respiratory Coronavirus, Parvo virus, Pseudorabies, transmissible gastroenteritis agent, *Streptococcus equi*,
20 *Clostridium tetanus*, Equine Influenza Virus A1 and A2 strains, Equine Rhinopneumonids type 1, 1b and 4, Eastern Equine Encephalomyelitis, Western Equine Encephalomyelitis, Venezuelan Equine Encephalomyelitis, Equine Rotavirus, *E. coli* O157:H7, *Pasterurella multocida*, *Pasterurella haemolytica*, *Clostridium perfringens* type D, *Clostridium chauvoel*, *Clostridium novyi*, *Clostridium septicum*,
25 *Clostridium haemolyticum*, *Clostridium sordellii*, *Salmonella dublin*, *Salmonella typhimurium*, Bovine Rotavirus, Bovine coronavirus, Bovine rhinotracheitis, Bovine diarrhea virus, Parainfluenza-3, Respiratory syncytial virus, *Sepullina pilosicoli*, Marek's disease virus, Infectious bursal disease, Infectious bronchitis, Newcastle disease virus, Reo virus, Turkey rhinotrachitis, Coccidiosis, Canine *Borrelia burgdorferi*, Canine *Ehrlichia canis*, Canine *Bordetella bronchiseptica*, Canine *Giardia lamblia*, Canine distemper, Canine Adenovirus, Canine Coronavirus, Canine Parainfluenza, Canine Parvovirus, Canine Rabies, Feline *Chlamydia psittaci*, Feline

immunodeficiency virus, Feline infectious peritonitis virus, Feline leukemia virus, Feline rhinotracheitis, Feline Panleukopenia, Feline rabies.

14. The method of claim 11, wherein the vaccine is administered through
5 drinking water.

15. The method of claim 11, wherein the animal is selected from the group
consisting of swine, poultry, cattle, sheep, goats, horse, cat and dog.

10 16. The method of claim 15, wherein the animal is selected from the group
consisting of swine and poultry.

15 17. The method of claim 16, wherein the administration of the orally
administered vaccine is a mass administration through drinking water.

18. The method of claim 17, wherein the animal is swine and the antigen is
Erysipelothrix rhusiopathiae.

20 19. The method of claim 11, wherein the animal is selected from the group
consisting of dog and cat.

20. The method of claim 19, wherein the administration of the orally
administered vaccine is at the back into the mouth through a syringe.

25 21. An orally administered animal vaccine formulation comprising as an
active component an antigen selected from the group consisting of a bacterium and a
virus, a water soluble palatable flavorant and a water soluble vehicle for
administration of the orally administered animal vaccine.

30 22. The vaccine formulation of claim 21, wherein the antigen is capable of
causing disease in an animal selected from the group consisting of swine, poultry,
cattle, sheep, goats, horse, cat and dog.

23. The vaccine formulation of claim 22, wherein the antigen is selected from the group consisting of *Erysipelothrix rhusiopathiae*, *Actinobacillus pleuroneumonia*, *Mycoplasma hyopneumoniae*, *E. coli* K88, K99, F41 and 987P, *Clostridium perfringens* type c, *Salmonella choleraesuis*, *Pasterurella multocida*,
5 *Bordetella bronchiseptica*, *Leptospira bratislava*, *Leptospira canicola*, *Leptospira grippotyphosa*, *Leptospira hardjo*, *Leptospira promona*, *Leptospira ictero*, Porcine Influenza virus, Circovirus, PRRS virus, Swine pox, Rotavirus, Porcine Respiratory Coronavirus, Parvo virus, Pseudorabies, transmissible gastroenteritis agent, *Streptococcus equi*, *Clostridium tetanus*, Equine Influenza Virus A1 and A2 strains,
10 Equine Rhinopneumonids type 1, 1b and 4, Eastern Equine Encephalomyelitis, Western Equine Encephalomyelitis, Venezuelan Equine Encephalomyelitis, Equine Rotavirus, *E. coli* O157:H7, *Pasterurella multocida*, *Pasterurella haemolytica*, *Clostridium perfringens* type D, *Clostridium chauvoei*, *Clostridium novyi*, *Clostridium septicum*, *Clostridium haemolyticum*, *Clostridium sordellii*, *Salmonella dublin*,
15 *Salmonella typhimurium*, Bovine Rotavirus, Bovine coronavirus, Bovine rhinotracheitis, Bovine diarrhea virus, Parainfluenza-3, Respiratory syncytial virus, *Sepullina pilosicoli*, Marek's disease virus, Infectious bursal disease, Infectious bronchitis, Newcastle disease virus, Reo virus, Turkey rhinotrachelitis, Coidiosis, Canine *Borrelia burgdorferi*, Canine *Ehrlichia canis*, Canine *Bordetella bronchiseptica*,
20 Canine *Giardia lamblia*, Canine distemper, Canine Adenovirus, Canine Coronavirus, Canine Parainfluenza, Canine Parvovirus, Canine Rabies, Feline *Chlamydia psittaci*, Feline immunodeficiency virus, Feline infectious peritonitis virus, Feline leukemia virus, Feline rhinotrachelitis, Feline Panleukopenia, Feline rabies.

25 24. The vaccine formulation of claim 21, wherein the vehicle for administration is drinking water.

25. The vaccine formulation of claim 21, wherein the animal is a swine and the antigen is *Erysipelothrix rhusiopathiae*.

30 26. The vaccine formulation of claim 21, wherein the animal is selected from the group consisting of a dog and a cat and the vehicle for administration is a syrup.

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